

PREPARING AND PLANTING YOUR KEYS EDIBLE GARDEN

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Presentation to the Garden Club of the Upper Keys

October 20, 2020



Entrance to the Islamorada Community Garden

THANK YOU FOR THE OLLAS ~ I put them in the soil the day after you gave them to us and, yes, they do work in the summer. I like them and would recommend them to anyone who asks. The plants surrounding the ollas were larger. I found that I fill them every third day.

GARDENING CAN BE SIMPLE OR COMPLICATED ~ Today, before I start, I want you to know that you can make vegetable gardening so incredibly simple and productive like just having a lettuce table or you can go all out, way down the rabbit hole and have “lost your mind” complicated like me. It is whatever suits your time, talent, finances and passion. I will discuss both in this talk. First the complicated and then then the simple and then I think we do questions.

TODAY’S INFORMATION AVAILABLE ~ Today I will be working off my notes. If you wish to have any of this information, I will send a copy to Laura who can forward it to you. If you want to drop in at the garden and learn, that is fine too. I can put you on the garden newsletter, just let me know. **TODAY’S DISCUSSION** is about preparing and planting in the Islamorada community garden.

COMPOSTING ONE YEAR BEFORE ~ Believe it or not, we start preparing for planting one year ahead of time. Crazy, right? As soon as we get the seeds in the ground, I turn my attention to making compost for the following year because it takes a year to be ready (fully mature compost). So, when we open the garden this year on Nov. 1, 2020, I will immediately start making compost for Nov. 1, 2021. We add an inch of compost twice a year on the plots. When you are making compost, diversity of ingredients is good; it will help with diversity of micro-organisms including essential bacteria and fungi.

- **SPINNING COMPOSTERS** ~ You probably want to know what composters we use. We tried many composters. We tried the spinning composters you see advertised in gardening magazines. I do not care for them at all and we no longer use those.
- **PALLET COMPOSTERS** ~ We tried Pallet composters where you tie up 4 pallets in a square and fill them up lasagna style with compost materials. (We started with these and continue to use them because they are free and easy).
- **WORM COMPOSTERS** ~ We tried Worm composters which are also called Vermiposters. Worm castings are so good for your soil. I do not have enough time to tell you all the many benefits of this system. You can do this cheaply, too, and I do not mind giving you a few worms to get you started. There are many videos on worm composting. I initially bought a “hungry bin” worm composter and it is still going strong. It is more expensive but no maintenance and has an easy tray at the bottom. Stop by the garden sometime and I will show you how it works.
- **JOHNSON-SU BIOREACTOR COMPOSTERS** ~ Finally, we built and tried a Johnson-Su Bioreactor composter. I am completely in love with this composter. They are a bit large for home use but as a group you could build one collectively and split the compost when it is finished. If you are interested in this, you can watch Dr. David Johnson’s online video. I think our current number of composters in the garden are 5 pallet, 5 Johnson-Su, and 2 worm composters.



Pallet composters



Johnson-Su composters with a variation on the right

Even if you do not use the compost as a top dressing, you can make compost extract or tea and put it on your plot at the beginning of the season to kickstart the living organisms in your soil. Remember, certain bacteria and fungi are what help feed your plants and having the right ones in your soil is critical to a healthy garden. Please watch any video by Dr. Elaine Ingham as she explains this so well. Photosynthesis, exudates, bacteria, fungi, nematodes, arthropods, worms, carbon sequestering and on and on. Many leading growers always refer to her and her studies and she basically started a worldwide movement for building better soil. After watching her videos, I was so inspired I even got a microscope to see what organisms are in my soil. Good ones, Bad ones, Anaerobic ones. She discusses all the things that live in your soil and what they do and what makes good soil. If you only watch one video, please watch her and learn the difference between dirt and soil. Also I want to remind you not to walk on your soil, instead make pathways, walking on your soil makes it compacted, then the air cannot penetrate and then it turns anaerobic and then the good organisms die and then you have big problems.

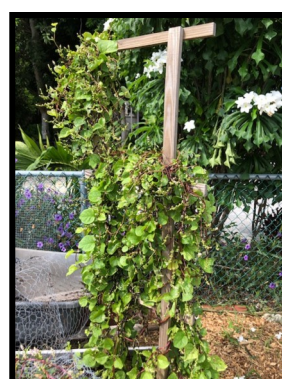
- **NEW KALEA KITCHEN COMPOSTER** ~ You put kitchen scraps in an appliance looking machine that shreds and dries the material and then it goes into another chamber where micro-organisms finish it off. Supposedly easy and no smell, but I think it costs somewhere around \$600.00.

As I said earlier, I like to add sifted compost to my soil twice a year. I believe that adding this compost to “NO TILL” soil makes all the difference in the world. Not everyone in the garden uses compost and not everyone does “NO TILL”. I have observed the difference each year in all the plots. The “NO TILL” and composted plots outperform all the others in every category every year. Every time you till the soil it harms the micro-organisms. Every time you walk on your soil and compact it you create anerobic conditions. Anerobic conditions make for bad micro-organisms leading to unhealthy plants.

CURRENTLY DOING TOMATO TEST THIS YEAR IN DIFFERENT SOILS ~ Next in preparing the garden, I will take notes on what was planted the year before so we can refer to them later and try to plant something different there the following year. You do not want to plant the same thing year after year in one spot due to diseases and nutrients.

COVERING THE PLOTS ~ The next step in preparing for planting is protecting the plots during the off-season. For this, we do one of two things with the plots. We either cover them with mulch, hay, leaves, or high-quality landscape fabric that does not disintegrate or we plant cover crops. Cover crops basically keep all the living organisms happy and add nutrients to your soil at the same time. For example, legumes add nitrogen to your soil. These cover crops are cut down about 2 weeks prior to planting and thrown in the compost which eventually makes its way back to the soil. We cut the crops off at the soil horizon so they do not grow back. The roots stay in the soil helping maintain the living organisms and soil structure and aeration. Another benefit of cover crops is that you can plant an edible cover crop like peas and beans and peanuts and sweet potatoes. Did you know that you can eat the young leaves of the sweet potato? Whichever method you decide to use, any of these covers will also keep the weeds from growing during the off season and protect the soil from the sun and drying out.

HAVING SOMETHING GROWING YEAR-ROUND IS BEST ~ Having something growing in your plot all year is the absolute best way to go because it keeps the living organisms going strong. In this train of thought, I have been taking notes from John Kohler about growing edible perennials. John does a site online called “Growing your Greens”. He has over 1200 or 1500 videos. Some of these videos deal with growing edible greens year-round in hot weather. So now, what I would like to work towards is having one of my plots filled with vegetables and cover crops and the other one filled with edible plants that love hot weather and grow year round, The edible plot I am currently working on is filled with Malabar spinach, Longevity Spinach, Okinawa spinach, Katuk, amaranth, shiso, etc.



Current bed plantings

EMPTYING THE GROW POTS ~ Next during the offseason, I empty the soil from the used tomato pots. I do not want any lingering soil diseases from that soil infecting next year's tomatoes. I take that soil and put it on the moringa trees and then start with fresh soil in the pot. I then grow a cover crop in the pots of a common edible weed called purslane during the offseason. It is incredibly

good for you and literally grows like a weed. High in Omega 3s and it tastes good too. I snack on it while working or take it home and throw it on a salad.

PLANNING AND DIAGRAM OF PLANTING ~ Next in preparation I draw a diagram of my plots and what I would like to grow for the upcoming season and where it should go. Lately I have been doing variety competitions. This past year, it was carrots. I did 8 types of carrots to see what grows best down here. That took up half of one of my plots. It was fun. We would see which grew the best and had a taste test at harvest time to see which ,were the best tasting. This year. the competition is going to be Beets. I have 7 types of beets. Last year, I planted some Ruby Queen and it was amazing. I love that you can eat the entire plant. How great is that! Is there a better beet for the Keys than the Ruby Queen? Stay tuned. This coming year I have a small ongoing competition between 4 new types of carrots, too. By the way, Mokum and Yaya were the carrot winners last year. But I really think you need cooler weather to have sweet carrots.



Tomato grow pots

SEED ORDER. In preparation, I make a list of all my seeds and order them and then store them in the refrigerator until a week or so before sowing. Some seeds were difficult to obtain this year due to COVID-19. This was partly due to greater demand for seeds and the greater numbers of people who are starting to grow food. Many are concerned about food security especially in this time of great uncertainty. I always try to plant from seed when possible. Some folks like to buy plants that have already been started. Please beware of buying plant starts from Home Depot, etc. It is possible you may be importing pests and soil diseases to your garden unknowingly. Seeds seem to be cheaper and left- over seeds can be used the following year. I would encourage you to order seeds from a reputable distributor like Johnny's Seeds, High Mowing Seeds, Botanical Interests Seeds, True Leaf seeds. When you go to buy your seeds, let me help you save a lot of time and money by telling you what seeds you should buy and what not to buy for growing in the Florida Keys.

- **WHAT TO GROW.** Here's a list of things that grow well for us in the garden: all Lettuces, all Kales, chard, collards, mustard greens, arugula, toy choy, dandelion, herbs especially basil, kohlrabi, radish, beets, carrots, okra, peas and beans, cherry tomatoes especially Everglades tomatoes, peppers, parsley and cilantro, eggplant, Seminole pumpkin, turmeric and ginger, moringa, peanuts and sweet potatoes, sunflower.
- **WHAT NOT TO GROW.** Now for the things that do not grow well or attract too many pests and diseases: Squash and zucchini, melons and cantaloupes, large tomatoes, heirloom varieties of many plants, cabbage, Brussel sprouts.
- **CAN GROW BUT REQUIRES SKILLS.** Now for the things that can grow but require skill: cukes, broccoli and cauliflower, onions and scallions, specialty potatoes. Do not forget to order flower seeds to help those local pollinators.

NEW OFFSEASON PROJECTS. Next in preparation, I am usually building a new plot or something, but now as of this year. we are built out. The coming year will be finishing what we have. Cementing broken blocks or painting plots. Mulching pathways.

SOIL THIS YEAR. Now just before this season starts, I am ordering a truck load of soil for some new plots from Atlas Peat and Soil in Boynton Beach. They have all kinds of mixes. We are ordering the "Vegi-Mix" soil blend. This may be a good alternative for you if you have enough people. I think it was like \$50 a yard plus tax and there is a minimum amount you can order. But you save a ton of money instead of buying bags. If you are buying bags watch John Kohler's "Growing Your Greens" video on best soil bags to buy. Not all bagged soil is equal. I think he liked the Dr. Earth which is

sold down here. Personally, If I am getting a few bags, I will usually get 2 bags of Miracle Grow potting mix and one bag of Miracle Grow soil, mix them and add azomite. When the truckload of soil arrives, everyone will top off their plots and then we will add compost extract to the soil during the planting stage to inoculate the soil with the right living organisms.

OPENING DAY. Earlier, Laura asked me when we start growing and planting. We open the garden November 1st and shut down April 1st .

READY, GET SET, GROW. On opening day, everyone sows seeds in their plots. They can catch up with each other, exchange seeds if they have extras, set up a watering schedule. It is fun. So that is it for preparing and planting. Let me take a few minutes to talk about other things that might help you. Let us start with the best thing a beginner vegetable gardener can do which is to figure out how they want to grow. I know many of you are seasoned growers, but still let us still take a moment to look at them.

FUN FACT. Did you know in the 1940s, during WW2, the government asked that everyone grow a “Victory Garden”? Around the USA, people started 20 million home gardens. Supposedly, they supplied 40% of the food consumed at that time. I heard this on the “The Urban Harvest” website.

EIGHT TYPES OF GARDENING. So, here are 8 types of gardening from simple to complex:

- 1) Sprouts in the kitchen window in an easy sprouter”;
- 2) Pots – black plastic, clay, new grow bags (best choice but research), recycled items like sinks and wheelbarrows and drums;
- 3) Microgreens and lettuces on a grow table;
- 4) Lettuce and veggies in “straw bale gardening” (See online videos);
- 5) Lettuces and veggies in more sophisticated tables like the ones built in Is-lamorada or order from online source like “garden supply”;
- 6) Ground plots: straight in the ground edible landscaping, raised beds online and snap together (I bought the plastic one and was not impressed);
- 7) Raised bed plots: cement, wood (although use pond liner with treated lum-ber), hurricane shutter or metal, key hole with composter in the middle (used worldwide but questions concerning decomposer organisms and crops). More permanent, especially cement, so consider your future needs.



Straw Bale gardening



Pictured left to right: aluminum storm shutter raised bed, key hole bed, and cement block bed.

8) Hydroponics and Aquaponics: I have seen these work. I believe there are many good applications. But personally, it does not interest me and my knowledge is limited on this subject. Hydroponics is supposedly a growing system using water and nutrients. Aquaponics from what I understand is a more of a closed loop system involving fish. The fish one interests me more but I am still

going for the soil and no moving parts. If this interests you, there is a person in Big Pine selling Hydroponic towers and if you have limited space to grow then this could be your solution. There are many online videos on DIY PVC pipe setups and small pool setups. I have one friend doing the PVC pipe thing and another friend doing the kiddie pool thing. Both are happy and say they have good results. The PVC pipe uses a small 110 pump to circulate water through the pipes and the pool has plants floating above a bubbler that keeps the water oxygenated and moving. Online, I recently saw the “Samsung indoor gardening appliance” which looked very interesting almost like a see-thru refrigerator with grow lights above grow shelves that are water fed and you just pop in a K-cup type pod that contains the seed and material for growing. I would love to have one of these but they are way above my budget. In summary, I still feel like the soil is best when considering what is “Good, Better, Best”.

FOR NUMBERS 2-7 be sure the plot gets 4-6 hours of sun a day. Preferably morning sun.

MY ALL TIME FAVORITE, THE LETTUCE TABLE. My top recommendation for anyone. Beginner or Seasoned gardener. Start out with a lettuce table. It is the best unless of course you do not like lettuce. If I could only do one thing, this would be it. Continuous harvest!!!!!! Fast growing!!!!!! It is low hanging fruit on the tree of gardening. Salad every night depending on how many tables and how many are eating. I am calling these lettuce tables but I grow all kinds of leafy greens. Tables are also the best bet because Iguanas cannot climb up – just make sure you do not have the table against a wall or leave the hose on the table that they can climb up. Have a wire mesh screen to lay over tubs so doves cannot root around for your seeds. This is not a problem once they sprout and form leaves.



One of the lettuce tables at ICG

What you will need

- go to Home Depot and purchase a large folding table - \$50, Shallow cement mixing tubs to fit top of table - \$40. Drill holes in both the table and the tubs to drain.
- 4 bags of miracle grow potting mix and 2 bags of miracle grow soil - \$ 70- mix thoroughly . Remember too, the more tables you have, the more soil you need. I sift my soil through a screen before using it because most bags of anything you buy have quite a bit of wood chips inside. These days I make my own soil mix: a mix of peat and regular soil and compost and vermiculite and a small amount of azomite and kelp powder. I find it a bit cheaper than the Miracle Grow.

We have 2 lettuce tables at the garden and they are recycled patio tables. Personally, I have 3 lettuce tables on the side of my house and absolutely love them. They are the folding tables from Home Depot. I have a 4th table but it is for mixing and sifting soil and it is more like a prep table. I usually grow about 10 different lettuces, kale, dandelion, arugula and sunflower microgreens. At first, I started with tubs and liked them but later built some boxes out of cedar wood to accommodate the exact size grow boxes I wanted based on what I eat weekly. When I plant, I stagger the planting so it does not all come in at once. On the table, I keep the sunflower microgreens going continuously in shallow plastic grow trays because they do not need as much soil as they are done in 9 days compared to a 6-inch lettuce that needs about 30 or so days. Those sunflower trays are from Paper Pot online. Sunflowers microgreens are probably one of my favorites, but you should but you should soak the seeds overnight before planting. They like to float,

so if you are soaking them in a Tupperware container, put another Tupperware container on top with a little water for weight to keep the seeds below submerged.

For the lettuce tables, get your seeds in bulk at True Leaf seeds. Do not buy pounds at first until you figure out what you like and how fast you want it to grow. Radish micros are 5 days, sunflower micros 10 days, lettuces are 20 or so days. Plant lettuces in a separate tub since they take longer. Stagger your planting so something is always coming in. Plant seeds fairly thick maybe a half inch apart. I use a salt shaker for my seeds. Water the soil first, then shake on the seeds and then water again and it seems to send most down into the soil an eighth inch or so. Experiment with this to see what is best. Thin the lettuce as it grows eating what you remove, cut with scissors just below the soil horizon so it will not grow back. Do the thinning evenly throughout the tub. I do it in rows. Thin so that by the time they are 6 inches high, they are about 3 inches apart. After you use all the lettuce, scrape off the top four inches of soil and put it into compost, on yard plants or worm bins. Refill the 4 inches with new soil and start again. Fertilize if desired. Usually I will put Alaska fish fertilizer and liquid kelp on top of the soil before the new 4 inches of new soil is added. You will probably be able to do this 2-3-4 times easy in a season depending how long your personal season is and how large you want to grow the lettuce. Water daily. Rule of thumb in watering: damp or wet to the second knuckle of your finger. Water with a wand nozzle, gently at first when sprouting. Make sure you get about a half day of sun, more or less, wherever you place the table. I have 3 tables on the side of my house and it works perfect. I will grow into the spring until the weather gets hot. I usually stop sometime in May although this year it was June. Then, once you are done put everything away for hurricane season. Fold the tables and stack the tubs and voila done!

WATER SYSTEMS. Consider water systems carefully. They can be very difficult. I bought 50 or so drip irrigation fittings and a month later the calcium in the water clogged them all. An expensive mistake. Then I tried about 7 different types of sprayers until I found 2 or 3 that I liked in different applications. There are many bad products out there so watch the “Growing Your Greens” videos on watering systems. Kohler had worse problems than me until he finally found the right one. You may want to consider something simple like catchment systems for roof water. Water systems are good if you are going to be away. The Ollas are good, but as I said earlier, they run dry in a couple of days. An automatic timer is a must on the watering system. I have been dealing with Dixie Aluminum on Plantation Key for all my watering system needs as they have the most complete inventory and selection that I have seen locally. Before I forget, make sure you have water filters somewhere at the start of your water system. There is a lot of chlorine in our water and that is not good for the living organisms in the soil. There are many filters online that hook to your hose. It is also good to have food safe hoses (also online). Do the research to find the best reviews and ratings before you buy.



3 Clay Ollas in a keyhole bed

FERTILIZERS. Be careful in choosing fertilizers. I would stick with organic fertilizers. Fertilizers and amendments can be helpful but most experts online say if they could only choose one thing, it would be worm castings. Next, they seem to like kelp meal or liquid kelp. A final favorite would probably be azomite and rock dusts. Be careful with manures as a fertilizer. I was getting material from the horse stables in Islamorada and it's good stuff. I am just not convinced lately it is something I want in my veggie soil. With all animal manure you must ask yourself, what medications and

and de-wormers and hormones, etc. are in this material. You also need to think about what they are feeding the horses and if that feed has any pesticides and herbicides which can pass through the animal and into your garden soil as you use the manure. I love hay as compost but recently there is big problems as many hay growers use an herbicide to kill everything except the hay. So, guess what happens when that hay is used in planting tomatoes. Not good. The straw used in Straw Bale gardening is different from what I understand so far but I have yet to do an in-depth study about it.

OVERCROWDING. Poor soil and overcrowding are probably two of worst things in growing your crops. PLEASE remember not to overcrowd your planting space, follow the spacing guidelines on the seed packet. All plants are different. Carrots are like 2 inches apart and kale 12 inches between plants. Overcrowding leads to stress which leads to pests and diseases.

LETTUCE TABLES ARE DIFFERENT. The lettuce tables are different because you know going into it that you are going to be overcrowding and thinning as they get bigger and need more space.

WATERING AND PESTS. Please remember not to water at dusk or nighttime as this promotes diseases. Morning is the best time to water, anytime during the day is fine , just not at night.

YOU CAN DO OTHER CHORES AS YOU ARE WATERING THE GARDEN, like pulling weeds and looking for pests and seeing what crops are ready for harvest. Each week while we are watering in the community garden everyone is supposed to look for pests.

- **APHIDS.** If you stop them early, it is much easier. I have had gardeners go on vacation for two weeks and when they come back all their crops are completely covered. To kill these, we keep a bottle of soapy water for aphids and whitefly. In bad cases of aphids and whitefly, we will use neem oil spray.
- **CATERPILLARS AND CUTWORMS.** To control them, we either just crush them or sprinkle diatomaceous earth on the plants. BT bacterial spray works well from what I hear. Cutworms are difficult to get rid of but look for a plant they just cut down and then dig in the soil until you find them. Tomato hornworms can eat so much of your plant, you will not believe it. They are hard to see because they match the plants color. I snip them in half with the scissors as I prune the tomatoes. The wasps come and eat the remains. If you are growing tomatoes, remember to keep cutting off all the “suckers” You can learn how to do this online in a 2-minute video. Otherwise, the plant gets way out of control.
- **LOOK FOR THE GOOD BUGS, TOO.** Remember ladybugs are your best friend in the garden and do not kill the larvae like I once did as the larvae look nothing like a ladybug. Look them up online to see a photo. Ladybugs will also tell you if you have a problem or if a problem is about to happen, so look around if you see ladybugs. Always check the bottom of your leaves on the pepper plants, tomatoes and brassicas for aphid and whitefly. Wasps are good. Bees are great, Millipedes are good as they help in the composting process. They are the hard-shell curly ones that you find in your house occasionally. They are not to be confused with Centipedes. You will find centipedes in the compost. They are okay but creepy and I do not kill them. Spiders and Scorpions and Centipedes will all bite so be careful. I have been in the garden for 8 years and I have not gotten bit yet because I carefully look under boards and things they hide in when working in the garden. The worst thing I have had happen in the garden was moving something one day and a lizard ran up my long pants. Very funny for anyone watching because I was jumping around doing some amazing dance moves. The scorpions and spiders like laying under stuff. The centipedes usually live in the soil and even more so in the compost. So, I see many of

when sifting compost. I usually find white grubs in the compost. I kill them. I believe they are Japanese Beetle larvae but am not sure.

- **WATCH FOR ANTS.** Ants are not good as they encourage aphid and whitefly. Let me know if you have a non-toxic way to get rid of them. I find them the hardest pest to get rid of. After saying all this, if you have a healthy garden, the bugs will usually work themselves out, but if you have stressed plants then you will have big problems.
- **IGUANAS.** Do not get me started. Although they do not usually come into the community garden, I have them at home where I grow lots of cukes. I bought netting from Gardeners Supply online and that seems to take care of the problem. But to put up the netting each year and then take it down is more work than I care to do, so this year I am trying trash cans to see if that will keep the iguanas from climbing up. There are certain things Iguanas do not seem to eat, like tomato plants and most herbs. But they love lettuce, kale, pepper plants, peas and beans.
- **CHICKENS.** This is a new one lately. They will eat your crops too. They also dig up your beds looking for bugs. Usually you can chase them away and they get the hint, but do not encourage them or feed them.

REFERENCES. Changing the subject now and starting to end the lecture part of this Zoom meeting. I want to remind you that gardening books are great. During this whole talk I have referred to the internet often and I rely on information from the internet when researching. But be careful who you listen to and check it against other sources. If you are buying garden products, be sure and read many reviews about products before buying.

•**THE URBAN HARVEST VIDEOS ONLINE.** I was watching videos this week from “The Urban Harvest”. Check it out. Growing food in Florida. Watch her “Getting Started Video”

•**JOE GARDENER**

•**JOHN KOHLER –“GROWING YOUR GREENS”**

•**DIEGO FOOTER**

•**LIVING WEB FARMS**

•**ELAINE INGHAM**

•**NETFLIX “KISS THE GROUND”** A new movie narrated by Woody Harrelson on why we should grow food, life in the soil and how that life might just be our solution to many problems including getting carbon emissions under control.

•**BIGGEST LITTLE FARM** A documentary on a married couple and their journey starting and running an organic closed loop farm.

HAVE FUN. And that leads me to my final advice to you. This is supposed to be fun, do not forget that part. It is like a never-r ending science project, let me try this or that and see if it works. Remember, there are no failures in the garden, only experiments. And even though it seems like a battle sometimes, let us all look at it like local master gardener Bill Albury. He has a good motto, he says, “You know Ed, I don’t get worked up about things. I just plant extra knowing that pests will get some, the birds and squirrels and iguanas will get some, the weather will get some, but I know in the end there will be some for me too.”

